

**REMARKS**

Claims 1 through 17, and 21 through 48 are pending in this application. Claim 4 is amended in several particulars for purposes of clarity in accordance with current Office policy, to assist the examiner and to expedite compact prosecution of this application. Claims 18 through 20 have been canceled without prejudice or disclaimer of its subject matter. Claims 21 through 48 have been newly added. The Applicant appreciates the Examiner's indication of allowance concerning claim 3.

**I. Interview Summary**

On 13 April 2004 a personal Office interview was held with participants Supervisor N. Patel, Examiner A. Perry and S. Sahota (47,051). We discussed the rejection of claims 1, 2, 4-6 under 35USC§102 with regard to Yamauchi, et al. (US Patent 6,351,061). The arguments presented included a response to statements in paper no. 022004, continuation sheet, surface roughness, process steps. Furthermore, with regard to the amendment to claim 4 concerning the thickness of the electron emissive material layer being from 20 to less than 70 microns, it was agreed that the amendment was supported by the specification and that it is not new matter.

We respectfully appreciate and thank Examiner Perry and Supervisor Patel for the Office Interview of 13 April 2004.

**II. CLAIM REJECTIONS - 35 U.S.C. § 102**

Claims 1-2 and 4-6 are rejected under 35 U.S.C. 102(e) as being anticipated by Yamauchi et al. (US 6,351,061). The Applicant respectfully traverses.

No claim is anticipated under 35 U.S.C. §102 (b) unless all of the elements are found in exactly the same situation and united in the same way in a single prior art reference. As mentioned in the MPEP §2131, “a claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). Every element must be literally present, arranged as in the claim. *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 9 USPQ2d 1913, 1920 (CAFC 1989). The identical invention must be shown in as complete detail as is contained in the patent claim. *Id.*, “All words in a claim must be considered in judging the patentability of that claim against the prior art.” *In re Wilson*, 424 F.2d 1382, 165 USPQ 494, 496 (CCPA 1970), and MPEP 2143.03.

Regarding claims 1-2, the Examiner stated that the Yamauchi reference specifically states that the range of the rough layer is 15 or less and more preferably 10 or less microns. The Examiner agrees that no specific examples falling within the claimed ranges are disclosed in Yamauchi, and that a case by case determination must be made as to anticipation according to MPEP § 2131.03.

MPEP §2131.03 also states that “The question of “sufficient specificity” is similar to that of “clearly envisaging” a species from a generic teaching. See MPEP § 2131.02.” *In re Schauman*, 572 F.2d 312, 197 USPQ 5 (CCPA 1978), which is cited in MPEP §2131.02, discusses “sufficient specificity” with regard to genus and species.

The Examiner indicated that because of flattening of the emissive layer is helpful that

therefore a narrower range is anticipated. However, it is not the teaching which is at issue, but the disclosure. Even then, col. 5, lines 40-45 of Yamauchi shows a concern about the decrease in adhesive force when the electron-emitting surface is flattened. Clearly, even with this reasoning, there are problems.

Furthermore, *In re Schauman or Ex parte Lee*, 31 USPQ2d 1105 (Bd. Pat. App. & Inter. 1993) (expanded Board), cited in MPEP 2131.03 did not intend this to be criterions of proving sufficient specificity.

Moreover, looking closely at Yamauchi, Yamauchi discloses of not more than 15 microns and preferably not more than 10 microns. There is no specific disclosure in Yamauchi of any specific constraint below 10 microns as mentioned above. As the Examiner states, no specific example is disclosed by Yamauchi. Yamauchi also does not disclose anywhere in the disclosure that Yamauchi is able to obtain a manufacture of not more than 8 microns or not more than 5 microns as claimed in the amended claims 1 and 2. Therefore, on that fact alone, Yamauchi fails to anticipate claims 1 and 2.

Concerning claim 4, the amended claim 4 is not anticipated by Yamauchi. As agreed to in the Office interview of 13 April 2004, the specification supports the thickness of the electron emissive material layer being from 20 to less than 70 microns for claim 4.

Therefore, since Yamauchi only discloses an electron emissive layer of 70 microns, claim

4 of the present invention is not anticipated.

The process steps in claims 5 and 6 should be given patentable weight since the process steps imply a structure according to MPEP 2113.

The Examiner in paper no. 8 disagreed because, "The MPEP lists process terms and simply states that such terms "are capable of construction as structural limitations." The Examiner stated that it is the position of the Examiner that the claimed product can be defined by process steps other than process steps claimed, including the process steps taught by Yamauchi.

In the summary of the office interview of 13 April 2004, the Examiner stated that concerning claims 5-6, the Yamauchi references anticipates the claims because of the extra process step of compressing the layer after being sprayed on the cathode that must be taken into account.

Respectfully, the fact that claimed product can be defined by process steps other than process steps claimed have nothing to do with the standard set in MPEP 2113 where structure implied by the process steps must be considered.

The Examiner goes to state that claimed manufacturing process steps are not found to impart structural characteristics to the final product different than the final product as disclosed by Yamauchi. The Examiner does agree that certain process steps may lead to a differently structured final product and in which case are considered patentable. However, the Examiner states that the Applicant has not provided teachings to suggest that such a differently structured product, as

compared with the product disclosed by Yamauchi, is produced."

Respectfully, however, as seen in the abstract of Yamauchi, the electron emitting material is sprayed on and then mechanically flattened, which results in the greater roughness maximum of not more than 10 or not more than 15 microns. Unlike the spraying of the electron emitting materials and then mechanical flattening of Yamauchi, the present invention, on the other hand, for example in claim 6, uses a printing method that is able to control the roughness to be not more than 8 microns. Therefore, since the structure claimed is not anticipated, claims 5 and 6 should also be allowed. The present invention is capable of controlling a lower maximum roughness as compared to Yamauchi.

Moreover, MPEP 2113 states, "*In re Garnero*, 412 F.2d 276, 279, 162 USPQ 221, 223 (CCPA 1979) (holding "interbonded by interfusion" to limit structure of the claimed composite and noting that terms such as "welded," "intermixed," "ground in place," "press fitted," and "etched" are capable of construction as structural limitations.)".

Therefore, according to MPEP 2113, the electron emissive material layer being attached on the base metal by printing and deposition as claimed in claim 5 or by a screen printing method as claimed in claim 6, by themselves are capable of construction as structural limitations.

Bascically, the method of attaching the electron emissive layer on to the base metal does in fact impart structural characteristics.

As explained in paragraph 8 of the present application:

However, since a spraying method uses only force sprayed by air pressure

without using any other pressure, it is limited in obtaining a uniform and dense coating film. More specifically, the structure of an electron emissive material layer attached by a spraying method is shown in FIGS. 2 and 3. FIG. 2 is an electron microscopy photograph of the section, which is enlarged 200 times, of an electron emissive material layer attached by a spraying method. As shown in FIG. 2, the size of the pore between particles is nonuniform, the surface is very coarse, and the texture is sparse. FIG. 3 is an electron microscopy photograph of the surface texture, which is enlarged 2000 times, of the electron emissive material layer of FIG. 2. It can be confirmed again that the size of the pore between particles is nonuniform.

The electron microscopy photographs shows the structural impact of the processes mentioned in claims 5 and 6. Therefore, since claims 5 and 6 capable of construction as structural limitations, the limitations must be taken into account. When taken into account, it can be seen that Yamauchi only sprays and then mechanically flattens, while claim 5 of the present invention claims printing and deposition and claim 6 claims screen printing. Therefore, claims 5 and 6 are not anticipated by Yamauchi.

### **III. Rejoinder of Withdrawn Claims**

According to MPEP §821.04 in the *In re Ochiai* rejoinder, when there is even a proper restriction between product and process claims and when the product claims are elected, and the product claims are allowable, the process claims that include all the limitations of the allowable

product claims would also be allowable.

Therefore, claim 7 has been amended for rejoinder because claims 7 now depends on allowed claim 3. Therefore, claims 7-9 should be allowed because of rejoinder under MPEP §821.04.

Claim 10 has also been amended to include the limitations of the product claim 1 and therefore, when claim 1 is allowed, claims 10-17 must be rejoined.

In view of the foregoing amendments and remarks, all claims are deemed to be allowable and this application is believed to be in condition to be passed to issue. If there are any questions, the examiner is asked to contact the applicant's attorney.

A fee of \$450.00 is incurred by the addition of twenty-five (25) claims above twenty (20).

Also, a fee of \$950.00 is incurred by filing of a petition for three-month extension of time.

Applicant's check drawn to the order of Commissioner accompanies this Amendment. Should there be a deficiency in payment, or should fees be incurred, the Commissioner is authorized to charge Deposit Account No. 02-4943 of Applicant's undersigned attorney in the amount of such fees.

Respectfully submitted,

  
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Date: 27 April 2004  
I.D.: REB/SS